

PATENT COOPERATION TREATY
PCT
INTERNATIONAL SEARCH REPORT
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 10104SG264	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/SG2004/000413	International filing date (<i>day/month/year</i>) 15 December 2004	(Earliest) Priority Date (<i>day/month/year</i>) 15 December 2003
Applicant NATIONAL UNIVERSITY OF SINGAPORE et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **4** sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II).

3. ☐ Unity of invention is lacking (See Box No. III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG2004/000413

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. : C08B 37/16; C07B 53/00, 63/02; B01D 15/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Cyclodextrin, beta(w)cyclodextrin cation, mono(w)cation, ammonium, phosphonium, imidazolium, pyridinium, separat, resolution, resolve, enantio, chiral

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	US 2004/0106199 A1 (ELISEEV, A V) 3 June 2004 See page 2 column 2 paragraph 0011, Scheme 1, "Examples", example 4, claims 1-10	1-3, 7-8, 13
X	WO 1997/049735 A1 (QUEEN'S UNIVERSITY AT KINGSTON) 31 December 1997 See pages 2-3 and 5-6, example 1, claims 1-11	1-3, 5-8, 10-16, 21-22
X	JP 4-081401 (TOPPAN PRINTING CO LTD) 16 March 1992 See page 2 column 2 compound (4) & PAJ abstract	1-3, 7-8, 13-22

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

* "A" Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but: later than the priority date claimed	

Date of the actual completion of the international search
14 February 2005Date of mailing of the international search report
23 MAR 2005

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

CHRISTINE BREMERS
Telephone No : (02) 6283 2313

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG2004/000413

C (Continuation).

DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Abushoffa, A M et al, "Enhancement of selectivity and resolution in the enantioseparation of uncharged compounds using mixtures of oppositely charged cyclodextrins in capillary electrophoresis", Electrophoresis (2003) vol 24 pages 343-350 See abstract, page 343 column 2 paragraph 3-page 344 column 1 paragraph 1, Fig 1 compound B	1-3, 7-8, 13, 26-30
X	Galaverna, G et al, "Enantiomeric separation of chiral peptide nucleic acid monomers by capillary electrophoresis with charged cyclodextrins", Electrophoresis (2003) vol 24 pages 2698-2703 See abstract, page 2699 column 1 paragraph 3, page 2700 column 2 paragraph 3	1-3, 5, 10-11, 13, 26-30
X	Yamamura, H et al "Capillary zone electrophoretic chiral discrimination using a cationic cyclodextrin derivative: determination of velocity and association constants of each enantiomer of the amino acid derivative with 6-trimethylammonio-deoxy- β -cyclodextrin", Electrophoresis (2001) vol 22 pages 478-483 See abstract, page 478 column 2 paragraph 1, page 479 compound 1, page 482	1-3, 7-8, 13-17, 19-22, 26-30
X	Christian, A E et al, "Comparison of the capacity of β -cyclodextrin derivatives and cyclophanes to shuttle cholesterol between cells and serum lipoproteins", Journal of Lipid Research (1999) vol 40 pages 1475-1482 See Fig 1 last three compounds, page 1477 column 2 paragraphs 2, 4 and 5	1-3, 7-8, 13, 16-17, 19-22
X	Nair, Usha B et al "Evaluation of two amine-functionalized cyclodextrins as chiral selectors in capillary electrophoresis: comparisons to vancomycin", Microchemical Journal (1997) vol 57 pages 199-217 See abstract, page 200 paragraph 4, page 201 paragraph 1, Fig 1	1-3, 7-8, 13, 26-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SG2004/000413

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	2004106199	WO	2004050709		
WO	9749735	AU	31617/97	CA	2257063
				US	5834446
JP	4081401	CA	2063454	EP	0485614
		EP	0710673	EP	0710672
		JP	4081402	JP	6080706
		US	5241059	WO	9118022

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX